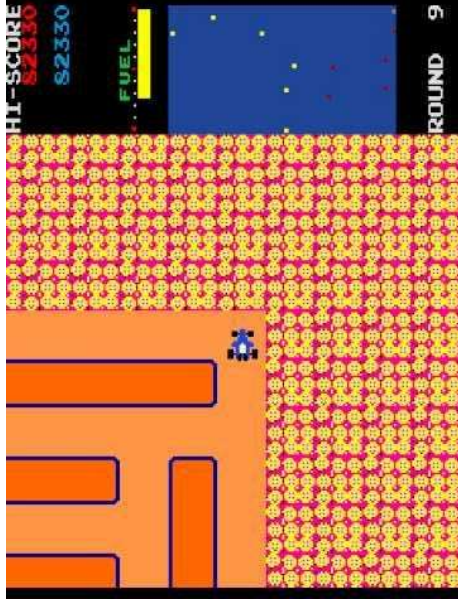# New Rally Y

Andrew Juang

Overview

- A classic driving arcade game from Namco
- First released in 1981
- Goal is to collect flags while avoiding enemies
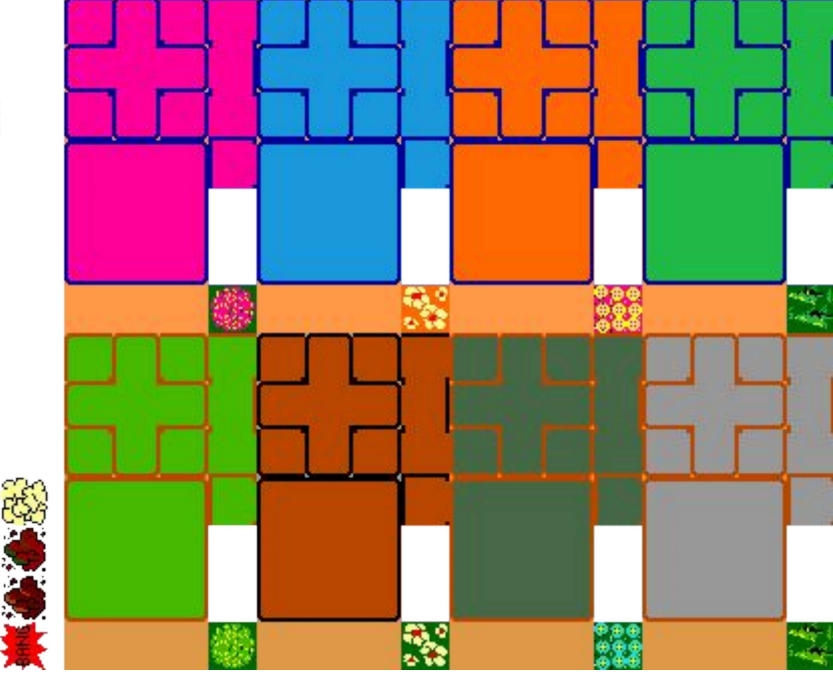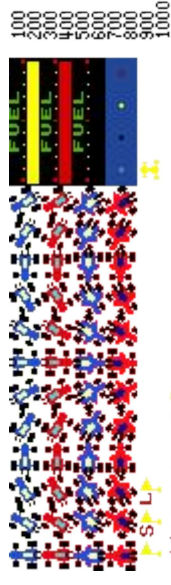- Map is somewhat of a maze

Milestones/Goals

- Attempt to implement sprite movement/controls on keyboard at a rudimentary level
- Attempt to implement scoring system and collision boxes
- Attempt to implement enemy game over collisions and basic AI
- Attempt to add in map collisions
- Attempt to add in PS4 controller support
- Attempt to add in audio support

Image Processing

- Generate memory initialization files for each image
- Images were taken from online sources for New Rally X sprite sheets, and upscaled to 32x32 bits

Sprite Specifications

- Sprites are theoretically better for memory optimization
- Should take up less memory than hard coding an entire map due to storing identical images
- Also should make storing different states of the player characters less space intensive

Sprites Specifications

- Base Green Background
  - 480 x 608 pixels (15 rows by 19 columns)
  - Mif: green
- Base Roads
  - Was supposed to add divider walls if had time
  - 416 x 544 pixels (13 rows by 17 columns)
  - Mif: orange
- Base Car Sprites and Flag
  - 32 x 32 pixels per car
  - Scoring system flag
  - Supposed to add red enemy ai if had time
  - Mif: player, ai

Memory Usage

- Hardware controls map information
  - Map remains largely unchanged
  - We didn't do the zoom since had issues with time
- Each address represents one 32x32 pixel space for all items
  - All sprites are 32x32, thus its convenient

Car Rotation

- Keyboard (Didn't have time to procure a controller)
  - USB keyboard from lab 2
  - Decided on basic 4 directions
  - Use arrow keys up, down, left, right to control direction facing
  - Single player game

Software

- Initialization
  - Initialize map, player character
- I/O Control to Hardware
  - Send position information to hardware
- Movement
  - Up, down, left, right inputs from usb keyboard

Hardware

- Edit VGA_Ball
- Rough since my Lab 3 knowledge was shaky

Lessons learned

- Issues with time management
- Issues with team management and communication
- Hardware/Software issues
- Sprite implementation